## Space Weather Forecast

Issued on Thursday, 10 November 2022 at 12:07 Local

**This forecast provides a four day assessment of space weather events. The probabilities stated below are for reaching or exceeding the given levels. For more information about space weather impacts please see the Met Office Space Weather Scales https://www.metoffice.gov.uk/weather/learn-about/space-weather/uk-scales**

---

**Space Weather Forecast Headline: Chance of isolated Moderate class flares (R1-R2/ Minor to Moderate radio blackouts).**

**Analysis of Space Weather Activity over past 24 hours**

**Solar Activity:** Solar activity has been Low, with only one significant Common-class flare from a simple region just inside the northeast quadrant, close to centre disc. The most significant region is further to the southeast inside the northeast quadrant and is a more complex bi-polar region, but which is relatively inactive. There are three remaining spots, all of which are small, weak or fading.

No Earth-directed Coronal Mass Ejections (CMEs) have been observed on available imagery. A CME (coronal mass ejection) was produced from a flare in a plage region toward the southeast limb concurrent with the C4 flare mentioned above. This has yet to be fully analysed but initial assessment is that this is very unlikely to have an Earth directed component.

**Solar Wind / Geomagnetic Activity:** The solar wind has been at background levels throughout the period with a gradual declining trend. Total magnetic field strength, IMF, has been weak, with the important north-south component also weak and mainly positive (northward pointing). Geomagnetic activity was Quiet (Kp 0-1).

**Energetic Particles / Solar Radiation:** The count rate of energetic particles (high energy protons) remained at background levels with no solar radiation storms observed.

**Four-Day Space Weather Forecast Summary**

**Solar Activity:** Solar activity is forecast to be Low or Very Low, perhaps with an increasing chance of isolated Moderate activity, due to the development of regions on the visible disc and returning regions rotating onto the disc from the far side of the Sun.

**Solar Wind / Geomagnetic Activity:** No Earth-directed CMEs are currently forecast for the next four days. Solar wind speeds are expected to be mainly at background, with a low risk of connection to a fast wind, most likely on 10 or 11 November. Geomagnetic activity is expected to be mainly Quiet to Unsettled, but with a slight chance of Active or G1/Minor Storms on 10 or 11 November, should the Earth connect with a further fast wind.

**Energetic Particles / Solar Radiation:** The count rate of energetic particles (High energy protons) is forecast to persist at background with no solar radiation storms anticipated.

Issued by Met Office Space Weather Advisor, Tel: +44 (0) 330 135 4254 Email: moswoc@metoffice.gov.uk

© Crown Copyright 2022. All Rights Reserved.

Met Office

# Space Weather Forecast

**Geomagnetic Storms:**

| Geo-Magnetic Storm Probability (Exceedance) | Level | Past 24 Hours (Yes/No) | Day 1 (00-24 UTC) (%) | Day 2 (00-24 UTC) (%) | Day 3 (00-24 UTC) (%) | Day 4 (00-24 UTC) (%) |
|---|---|---|---|---|---|---|
| Minor or Moderate | G1 to G2 | No | 5 | 5 | 1 | 1 |
| Strong | G3 | No | 1 | 1 | 1 | 1 |
| Severe | G4 | No | 1 | 1 | 1 | 1 |
| Extreme | G5 | No | 1 | 1 | 1 | 1 |

**Radio Blackouts - X Ray Flares:**

| X Ray Flares Probability | Level | Past 24 Hours (Yes/No) | Day 1 (00-24 UTC) (%) | Day 2 (00-24 UTC) (%) | Day 3 (00-24 UTC) (%) | Day 4 (00-24 UTC) (%) |
|---|---|---|---|---|---|---|
| Active | R1-R2 M Class | No | 20 | 25 | 30 | 30 |
| Very Active | R3 to R5 X | No | 5 | 5 | 5 | 5 |

**Solar Radiation Storms - (High Energy Protons):**

| Radiation Storms Probability (Exceedance) | Level ($cm^{-2}$ $sr^{-1}$ $s^{-1}$) | Past 24 Hours (Yes/No) | Day 1 (00-24 UTC) (%) | Day 2 (00-24 UTC) (%) | Day 3 (00-24 UTC) (%) | Day 4 (00-24 UTC) (%) |
|---|---|---|---|---|---|---|
| Active | ≥ S1 | No | 1 | 1 | 5 | 5 |
| Very Active | ≥ S3 * | No | 1 | 1 | 1 | 1 |

* S3 ≥ 10 MeV ≥ 1000 pfu and / or ≥ 50 MeV ≥ 10 pfu. (pfu = $cm^{-2}sr^{-1}s^{-1}$)

Issued by Met Office Space Weather Advisor, Tel: +44 (0) 330 135 4254 Email: moswoc@metoffice.gov.uk

© Crown Copyright 2022. All Rights Reserved.